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ABSTRACT

This booklet lists and summarizes a number of studies of cost analysis in educational planning and management that have been published by the International Institute for Educational Planning (IIEP). Section A lists 27 IIEP case studies, of which 12 are summarized briefly. Section B presents a fairly lengthy summary and description of another IIEP publication entitled "Educational Cost Analysis: A Tool of Modern Management and Planning," by P. Coombs and J. Hallak. (JG)

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SUMMARY OF STUDIES OF COST ANALYSIS IN EDUCATIONAL PLANNING AND MANAGEMENT BY THE INTERNATIONAL INSTITUTE FOR EDUCATIONAL PLANNING

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May 1971

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NOTE: The views expressed in this summary and in the cited papers are the opinions of the authors and do not reflect anticipated Agency policy or practice. The purpose of this Summary is to provide addressees with knowledge of studies available for distribution and to stimulate discussion and analyses of development policy issues.

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A. Brief Descriptions of Twelve Individual Case Studies

1) Cost Analysis in an Asian Model of Educational Development, I. Auerhan and E. Solomon (III-273*)

This study describes the Unesco Asian Model for Educational Development and shows the implications of a series of educational hypotheses accepted by the Ministers of Education in the countries concerned in terms of current and capital expenditures broken down by teacher salaries, non-teacher costs, etc. Three separate groups of Asian countries have been distinguished and projections made separately for each group. A feasibility-testing exercise, relating the expenditures to GNP and to projections of public revenues, has been described.

One conclusion reached was that for wider utilization of this model it is necessary to test it within a specific framework of national conditions in several countries. This seems feasible because of the simplicity and flexibility of the model. In this respect, the model could make a significant contribution to educational planning in numerous countries.

2) Costing an Expansion Programme for Secondary Education: the Case of Rio Grande do Sul, Brazil, R. Fachin (III-277)

The US/AID project for expanding secondary education in four states of Brazil provides the basis for this case study, which concentrates on the cost implications of the expansion for one state. After a brief description of the general setting of the expansion program, the study outlines the steps followed by the working group of the State Council of Education in Rio Grande do Sul in devising its state plan of education, particularly in the secondary education development project. The relationship between the state working group and the federal group designed to develop secondary education in Brazil was examined to increase understanding of the whole process of administration. This is followed by a discussion of the method used to analyze and forecast enrollment and to estimate capital requirements and current costs. Brief comments are included on problems of implementing the secondary development project.

3) Improving Efficiency in the Utilization of Teachers: a Case Study on Technical Education in Chile, L. Arrigazzi and J. de Simone (III-278)

This study is concerned with an exercise carried out in Chilean state education between March and April 1968, aimed at improving the utilization of existing teachers in order to facilitate increased enrollments without increasing the number of teacher hours above their 1967 level. The need for such an operation arose because of severe

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financial constraints which had led educational authorities to freeze the technical education budget for 1968. At the same time, the 1965 Educational Reform had reduced the teaching duties of the technical school teachers, thus creating the possibility of using the "surplus" teacher hours to expand enrollments. The experiment was modest in scope and method. The Chilean government attempted to increase the existing ratios of students per class and redistribute teachers and vacant teacher hours between "surplus" and "deficit" schools within the same or among different areas. The measures taken were in general terms successful.

The case study illustrates the need for ex-ante studies of educational reforms and some of the main constraints to be found in redistributing human resources in this way. Secondly, it demonstrates that the existing underutilization of teachers was partly a result of shortcomings in the current system of teacher appointments, which may be common to other countries with centralized educational administrations.

As a result of the experience, a new system has been put into practice in Chile. It has established clear norms for appointing teachers and makes provisions for improving the information flow and communication channels between schools and central administration and the supervision system. Finally, the study shows how in spite of the simplicity of the approach, efficiency was significantly improved: the "output" per teacher increased (in quantitative terms), recurrent costs per student were reduced, and substantial economies were made.

4) The Use of Capital Costs in Educational Planning: the Case of the Fifth French Plan, C. Tibi (III-275)

This case study shows how French planners establish norms and unit cost standards in each level and types of education. It describes the methodology of estimating equipment costs used in the current Fifth French Plan and demonstrates the cost implications of the government's decision to limit the expansion of the financial resources allocated to education. The study examines how such budgetary constraints affected the distribution of available resources between various levels and shows how priorities are established and adjustments made during the planning process.

5) The Cost of Introducing a Major Innovation in Primary Education: the Ivory Coast Experience, Ta Ngoc Chau (III-272)

This case study is concerned with the cost and financial aspects of the proposed introduction of instructional television coupled with far-reaching reforms in primary education in the Ivory Coast. The aims of the reform are (i) to expand primary education in rural areas, (ii) to upgrade quality and reduce wastage, (iii) to make the content

of education more relevant and (iv) to reduce migration from rural areas. Educational television plays a major role in upgrading teacher qualifications and in spreading the new curriculum.

The report examines the recent development of primary schools in the Ivory Coast, with the focus on expenditure and unit costs. This is followed by an analysis of the options available to the government when planning the reform and their effects on cost. Then, in a detailed presentation, the author shows how cost estimates were prepared for the educational television project, and discusses its marginal costs and its anticipated advantages.

The total current and capital cost of the reform are analyzed separately. Finally, in a general conclusion, some general lessons are drawn from this experience on the preparation of cost estimates and the use of cost analysis in planning educational reforms and innovations.

6) The Role of Cost Analysis in Planning a Teacher-Training Programme: the Polish Experience, K. Podolski (III-274)

This case study is mainly concerned with costing a teacher-training programme in Poland for the period 1971-1975. It examines the analytical methods used. After an analysis of the cost of various teacher-training systems in Poland, the report establishes cost forecasts based on a projection of primary teacher needs over the planned period. It describes the methods used to project costs, and the conclusions reached regarding the cost of several different policies of training teachers, such as through university and the Ecole Supérieure de Pédagogie, or through a shorter training course in the Ecole Supérieure des Maîtres. In a special section prepared independently by the IIEP, some useful lessons for other countries have been drawn from the case study regarding (a) the impact of this method of analyzing the cost implications of various policy decisions on decision-making and (b) the methodological problems of cost estimation involved.

7) The Use of Cost Analysis in Estimating the Total Cost of an Educational Plan and Testing Its Feasibility: the Case of Thailand, H. Reiff (III-276)

The purpose of this case study is to use the cost data supplied by an earlier case to estimate the total cost of the Thai Educational Plan and to test its financial feasibility, taking into consideration the hypotheses and targets of the general economic development plan. In this respect, it is more an exercise than a report on practical experience.

8) Programming Annual Current and Capital Expenditures during the Planning Period: A Case Study of Hungary, L. Faluvegi

This case study emphasizes the problems involved in (a) the calculation of unit-costs, (b) the estimation of historical trends in unit-costs, (c) the choice among alternative options when preparing plans and (d) the preparation of annual budgets. It describes how these problems are solved in Hungary, based on the latest Plan, and examines current experience of implementing this plan.

9) Tanzania: Planning for Implementation, N. Bennett

The purpose of the case study is to show the role of unit cost analysis in assessing the total cost of the Tanzanian Educational Plan (1964-1969) and in testing its feasibility. It also aims at comparing the implementation of the plan during its first year in relation to its targets.

10) Economic Planning and the Financing of Higher Education in the U.S.S.R., D. Chuprunov and L. Tulchinskii

The purpose of the case study is to analyze the Soviet experience in budgeting the targets of higher education plans and to study the role of unit costs in the forecasting of expenditures, both within the framework of the Five-Year Plan and of the preparation of annual budgets.

11) Estimating the Annual Budget Requirements of the Educational System: A Case Study on U.S.S.R., V. Basov

The purpose of this case is to explain and illustrate (by using actual figures involved in the current five-year plan of the USSR) how estimates of financial requirements (capital and recurrent treated separately) are worked out in connection with forward planning of elementary and secondary general education for one republic (the RSFSR) and how final figures are arrived at for annual budgeting during five years. The study also compares forecasts and actual experience in the first two years of the current plan.

12) Comparative Costs and Efficiency of Full-time and Part-time Education in the U.S.S.R., V. Zhamin and B. Remennikov

The purpose of this study is to show how cost analysis can help in decisions involving the allocation of resources as between alternative forms of education - in this instance, full-time versus part-time university study. The study reviews recent analyses of costs for part-time "correspondence"type university studies, including both direct costs (shown in educational budgets) and the indirect costs ("opportunity costs") absorbed by the worker's enterprise.

The fifteen studies summarized earlier in Ref circular are as follows:

Factors Influencing Change in Teachers' Basic Salaries: A Tanzanian Example, J. Chesswas (III-224)

Costing First and Second Level General Education: The Case of Ceylon, J. Alles, W.D. Fernando, D.P. Wijegunasekera, D. Gunaratus, M.A. deSilva, C. Hettiarachchi (III-226)

Educational Cost Analysis in Thailand, H.W. Reiff (III-222)

Evaluating the Expansion of a Vocational Training Program: A Chilean Experience, L. Arrigaz i (III-232)

The Role of Cost Analysis in the Introduction and the Implementation of the 1962 Reform of Malagasy Primary Education, Ta Ngoc Chau (III-228)

The Use of Educational Cost Models in Planning the Extension of Compulsory Education in Norway, O. Magnussen (III-233)

Marginal Costs for Marginal Decisions: The Case of Team Teaching in Barbados, R. Durstine and B. Hudson (III-235)

The Use of Cost Benefit Analysis as a Guide to Resource Allocation in Education: A Case Study in India, M. Woodhall (III-230)

The Use of Cost Benefit Analysis to Compare the Rates of Return at Different Education Levels: A Cost Study of Colombia, M. Woodhall (III-231)

Educational Cost Evaluation in Uganda, N. Bennett (III-227)

Behavior of Non-Teacher Recurring Expenditures: A Uganda Case Study, J. Chesswas and J. Hallak (III-223)

The Use of Cost Evaluation in the Planning of Makerere University College, Uganda, N. Bennett (III-229)

The Use of Cost Analysis to Improve the Efficiency of School Building: A Case Study of British Experience, M. Woodhall (III-236)

Comprehensive Analytical Methods for Planning in University Systems: Planning a New Health Sciences Education Complex, J. Levine, R. Judy, R. Wilson (III-234)

Costs of Public Secondary Education in Morocco: Analysis of the Results of a Governmental Survey, J. Proust (III-225)

B. Educational Cost Analysis: A Tool of Modern Management and Planning, P. Coombs and J. Hallak (III-~~237~~ 251) pp. 207, 1970.

The manual is divided into three parts. The first part summarizes

the 27 case studies (cited in part A of this paper) out of which the manual grew. The second part presents a systems analysis approach to the educational sector and its problems. In addition, it presents the economic tools and concepts necessary for a systematic consideration of education. The final part contains a more detailed presentation of the specifics of undertaking cost analyses--methods, data, problems and uses.

The studies are divided into three types. The first, labelled "Testing the Economic Feasibility of Expansion Plans," consists of ten studies mainly utilizing projection techniques. In one case a generalized mathematical model (The Asian Model of Educational Development, cited as study #1 in part A of this paper) was set up, but typically the costing was done on a simpler, individual case basis. Several of the cases describe the costing process through which various countries went and the resultant changes in the budget. Others describe ex-post analyses that were designed to improve future planning efforts. The value of these studies is in their demonstration of how cost analysis can be undertaken with various degrees of data sophistication and can influence practical decision-making in the educational sector.

The second set of eight studies deals with "Costing Educational Reforms, Innovations and Alternatives." Obviously, the decision to put some studies under this rubric rather than the first one is very marginal (for example, what is the essential difference between a "reform" and an "expansion"?). The techniques utilized in these studies include rate of return analysis, cost-benefit analysis, simulation, and simple projections. In several of these cases the results of the study were instrumental to the final choices made. In others, the immediate impact was not great (e.g., the rate of return studies) but the results are cited and undoubtedly utilized in discussions of various educational policy questions.

The final group of nine studies was gathered under the title of "Getting the Most from Available Resources." This group of studies includes one which is an elaborate, computerized decision making simulation model for education (the "Comprehensive Analytical Methods for Planning in University Systems" model -- CAMPUS) which has been utilized in Canada and for which cost, monetary and resource, data for use of the model in developed and less developed countries is included. Given the financial pinch that educational systems in most countries are in, this set of case studies may have the greatest applicability as they are concerned with utilization of existing resources. However, the borders between these three groups are thin and each has great potential for important impacts on efficiency in education.

The second part of the book is directed to the non-economist. However, many economists will find that reading through this review is a worthwhile endeavor. It first presents an outline of the systems analysis approach to problems emphasizing the differences between, relations among, and importance of considering objectives, inputs,

processes, outputs, and benefits. Then it launches into a discussion of such concepts and dichotomies as efficiency, productivity, resource and monetary costs, capital and current costs, and constant and current prices. Finally, educational costs are discussed in terms of the various factors that lead to cost increases overtime and the time patterns of expenditures on education and revenues for education. The concepts in this second part are of fundamental importance for any rational consideration of an educational system.

The last part of the book is a pragmatically-approached presentation of methods for and difficulties in utilizing cost analysis in less developed countries. Formats for specific tables are included, along with the probable location of sources of data, uses, common difficulties, and necessary caveats. These are done for the study of recurrent costs, capital costs, and for putting them together with other data for feasibility studies. Parables of the type of situations that could be avoided by cost analysis are also included.

In summation, this manual presents some new examples of the utilization of cost analysis in nineteen different countries. In addition, fundamental concepts and methods for the systematic consideration of education are carefully explained and illustrated. The knowledge contained in this volume represents a basic requirement for every practitioner of the arts of educational management and educational planning.

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